

Application No. 09/933,493
Response to OA dated: March 9, 2006
Response/Amendment dated: September 11, 2006

In the Claims:

Please cancel Claims 20-21; amend Claims 1-12, 24-26 and 29; and add new Claims 34-37, all as shown below. Applicant respectfully reserves the right to prosecute any originally presented or canceled claims in a continuing or future application.

1. (Currently Amended) A system for session-based retrieval at a client system of content from a server system, comprising:

a communication protocol that enables an asynchronous session-based connection between a client system and a server system, and allows the client system to send, within a session between the client system and the server system, a plurality of consecutively input query strings, to query the server system for string-based content;

a client object, in communication with a client software at the client system and with the communication protocol, wherein the client object receives additional characters from the client software, and as each character is being received, transmits to a server object at the server system a plurality of consecutive queries, within the same session, to retrieve content from the server system, wherein each consecutive query one of lengthens or shortens the query string by one or more the additional characters, and forms an increasingly focused query string for retrieving matching content from the server system; and

a server object, in communication with the server system, and in communication with the client object via the communication protocol, wherein the server object records, during the session, each of the plurality of consecutive queries from the client system, and in response to receiving each consecutive query as it is being lengthened or shortened lengthens or shortens the query string by the additional characters by one or more characters, automatically matches the increasingly focused query string against the content of the server system, and asynchronously returns increasingly relevant matching content information to the client object for immediate use by the client system.

2. (Currently Amended) The system of claim 1 wherein said client object operates on or at a first computer and said server object operates on or at a second computer, and wherein both of said first and said second computers are connected via a the communication network protocol.

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3. (Currently Amended) The system of claim 1 wherein said server object and said client object both run runs on the same computer.
4. (Currently Amended) The system of claim 1 wherein said the system comprises a plurality of server objects that run runs on a plurality of separate computers, and wherein said client queries are distributed over said separate computers.
5. (Currently Amended) The system of claim 1 wherein said server object stores previously received results from the server strings as stored results, and initially returns said stored results strings to the client in response to new client queries, without accessing said the content at the server.
6. (Currently Amended) The system of claim 1 wherein said client software is embedded into a software application that provides a visual interface to an operator and allows the operator to add or remove additional characters to lengthen or shorten the query string, while simultaneously receiving increasingly matching results from the server.
7. (Previously Presented) The system of claim 1 wherein said client software is used as a content engine for another software system.
8. (Currently Amended) The system of claim 1 wherein said client software accumulates a plurality of said single character queries as they are entered into the client, before sending them plurality of said single character queries together to said server as a single string.
9. (Currently Amended) The system of claim 1 wherein said client object stores previously received responses from the server in a cache and uses these as the response to a new query by the user, without re-accessing the server.
10. (Currently Amended) The system of claim 1 wherein said client software stores a pre-defined query string and automatically transmits it to the server as the client software is first

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accessed, and wherein additional entry of query characters is not required before server responses are sent to the client.

11. (Currently Amended) The system of claim 1 wherein said server stores the state of query and response of the client software, and restores the state of the client software after any interruption in said communication protocol, including an automatic or manual network interruption or termination of the session.

12. (Currently Amended) The system of claim 1 where said client software adds a qualifier to the string query that is passed to the the server, whereby the server can use said qualifier to execute the query and return appropriate results based on both the query string and its qualifier.

13. (Previously Presented) The system of claim 1 where said client software identifies a user of the system to the server whereby the server can store statistics and provides a history of queries and corresponding responses appropriate to said user.

14. (Previously Presented) The system of claim 1 where said server system comprises a server tier and a syndication tier, and wherein said client software communicates to the server tier on a single computer, and wherein each query is forwarded by the server tier and the syndication tier to an appropriate syndicate of content channels connected to the server tier on a different computer.

15. (Previously Presented) The system of claim 1 where said server applies a content dependent pattern and filter to characters received from the client before queries are matched against the content.

16. (Canceled).

17. (Previously Presented) The system of claim 1 where server responses comprise lists of strings, wherein each string is accompanied by corresponding metadata, whereby the metadata contains logical links to other data sources or Uniform Resource Identifiers.

18-23. (Canceled).

24. (Currently Amended) A user interface mechanism, for use with a client application of a session-based content retrieval system, said user interface mechanism indicating both the availability of a session between said client application and a remote content server, and the status of said session, said mechanism comprising:

a user interface element and input field, in communication with said client application, said user interface element input field allows a user to input data for transmission to a remote content server, wherein said input data includes a plurality of single string characters as part of a query;

a communication protocol that enables an asynchronous session-based connection between the client and the server, and allows the client to send, within a session between the client and the server, a plurality of consecutively input query strings, to query the server for string-based content wherein the client receives additional characters from a user, and as each character is being received transmits to a server object at the server a plurality of consecutive queries, within the same session, to retrieve content from the server;

a server object, in communication with the server, and in communication with the client via the communication protocol, wherein the server object records, during the session, each of the plurality of consecutive queries from the client, and in response to receiving each query as it is being lengthened or shortened by one or more additional characters, automatically matches the increasingly focused query string against the content of the server, and asynchronously returns increasingly relevant content information to the client for immediate use by the client;

a session connection indicator, said session connection indicator displayed within a first portion of said user interface element the input field, for indicating the presence availability of a session connection between said client application and said content server; and,

a status indicator, said status indicator displayed within a second portion of said user interface element the input field, for indicating during said session the status of increasingly available content at said content server for selection by said user at said user interface element that input field.

25. (Previously Presented) The mechanism of claim 24, wherein said user interface element

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is an application input field several input fields in the user interface have session connection indicators and status indicators to indicate to the user the availability of a connection between said client application and said content server for those input fields, and the status of increasingly available content at said content server for selection by said user at those input fields.

26. (Currently Amended) The mechanism of claim 24, wherein said session connection indicator displays a triangular display element to indicate the presence of said session connection, and does not display said triangular display element to indicate the absence of said session connection.

27. (Previously Presented) The mechanism of claim 24, wherein said status indicator displays one, or a plurality of, arrow display elements to indicate the transfer of data from said client application to said server during said session, and the presence of available session-specific content at said server.

28. (Canceled).

29. (Currently Amended) A method of providing session-based communication at a client of string-based content from a server, comprising the steps of:

providing a communication protocol that enables an asynchronous session-based connection between a client object and a server object, and allows the client object to send, within a session between the client object and the server object, a plurality of consecutively input query strings, to query the server for string-based content;

transmitting, via the client object in communication with said client, to the server object a plurality of consecutive queries, within the same session, to retrieve content from the server, wherein the client object receives additional characters from a user, and as each character is being received transmits to a server object at the server a plurality of consecutive queries, within the same session, to retrieve content from the server, wherein each consecutive query one of lengthens or shortens the query string by one or more characters, and forms an increasingly focused query string for retrieving content from the server; and

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receiving, via said communication protocol, at the server object each of the plurality of consecutive queries from the client, and in response to receiving each query as it is being lengthened or shortened by one or more additional characters, automatically matching the increasingly focused query string against the content of the server, and asynchronously returning increasingly relevant content information to the client object for immediate use by the client.

30. (Previously Presented) The system of claim 21, wherein the server object matches each query received from the client against an in-memory cache, and returns cached content to the client without accessing said content engine, unless the cached content has expired since it was last received from said content engine.

31. (Previously Presented). The system of claim 21, wherein the server analyzes the time between said consecutive queries received from each client system, and skips selected ones of said consecutive queries to reduce network communications and the load on said content engine.

32. (Previously Presented) A system for session-based retrieval at a client of content from a server, comprising:

a communication protocol that enables an asynchronous session between a client and a server, and allows the client system to send, within a session between the client and the server, a plurality of consecutively input query strings, to query the server for content;

a user interface at the client that allows a user to enter a search string;

a client object, at the client, wherein the client object receives characters of the search string from the user interface as it is being entered by the user, and transmits to a server object at the server a plurality of consecutive queries, within the same session, to retrieve content from the server system, wherein each consecutive query matches the characters of the search string as it is being entered, to form an increasingly focused search string for retrieving content from the server;

a server object, at the server, wherein the server object records, during the session, each of the plurality of consecutive queries from the client, and in response to receiving the increasingly focused search string from the client object, automatically matches the search string against the

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content of the server system, and asynchronously returns increasingly relevant content information to the client object for immediate use by the client; and

wherein the content information is used by the client to immediately update the user interface with options that match the content of the server system, as the user is entering the search string.

33. (Previously Presented) A method of providing session-based communication at a client of string-based content from a server, comprising the steps of:

providing a communication protocol that enables an asynchronous session between a client and a server, and allows the client system to send, within a session between the client and the server, a plurality of consecutively input query strings, to query the server for content;

providing a user interface at the client that allows a user to enter a search string;

providing a client object, at the client, wherein the client object receives characters of the search string from the user interface as it is being entered by the user, and transmits to a server object at the server a plurality of consecutive queries, within the same session, to retrieve content from the server system, wherein each consecutive query matches the characters of the search string as it is being entered, to form an increasingly focused search string for retrieving content from the server;

providing a server object, at the server, wherein the server object records, during the session, each of the plurality of consecutive queries from the client, and in response to receiving the increasingly focused search string from the client object, automatically matches the search string against the content of the server system, and asynchronously returns increasingly relevant content information to the client object for immediate use by the client; and

wherein the content information is used by the client to immediately update the user interface with options that match the content of the server system, as the user is entering the search string.

34. (New) The system of claim 1, whereby the client object indicates the selection of the content sources to be queried to the server when said session is initiated and when content source selection changes are needed thereafter, without needing to embed said content source selection with each of said consecutive string-based queries.

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35. (New) The system of claim 1 whereby said session is shared by multiple client objects that exchange messages with the same server system, whereby each client object identifies a different content source selection to which said consecutive queries from the individual client object will be mapped by its corresponding server object.

36. (New) A system for providing session-based searching of string-based content from a server, comprising:

a user interface that allows a user at a client to enter a string of consecutively input queries to query the server for string-based content, wherein each consecutive query lengthens the query string by one or more additional characters;

a communication protocol that transmits, via a client object at said client, to a server object at the server, the plurality of consecutive queries, to retrieve content from the server, wherein each additional character is immediately transmitted to the server object as the user is entering the additional characters in the user interface, to form an increasingly focused query string for retrieving content from the server; and

a server object which in response to receiving each query as it is being lengthened or shortened by the one or more additional characters, automatically matches the increasingly focused query string against the content of the server, and, as the user is entering queries, asynchronously modifies the user interface by returning increasingly relevant server content information to the client object for immediate display to the user.

37. (New) A method of providing session-based searching of string-based content from a server, comprising, comprising the steps of:

providing a user interface that allows a user at a client to enter a string of consecutively input queries to query the server for string-based content, wherein each consecutive query lengthens the query string by one or more additional characters;

transmitting, via a client object at said client, to a server object at the server, the plurality of consecutive queries, to retrieve content from the server, wherein each additional character is immediately transmitted to the server object as the user is entering the additional characters in the

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user interface, to form an increasingly focused query string for retrieving content from the server; and

in response to receiving each query as it is being lengthened or shortened by the one or more additional characters, automatically matching the increasingly focused query string against the content of the server, and, as the user is entering queries, asynchronously modifying the user interface by returning increasingly relevant server content information to the client object for immediate display to the user.